

AMENDMENTS TO THE SPECIFICATION:

Please add the following new heading before line 1 of the application:

TITLE

Please add the following new headings *before* the paragraph starting “The invention relates to...” on page 1 of the application:

BACKGROUND OF THE INVENTION

(1) Field of the Invention

Please delete the paragraph “Description of the prior art” on page 1 of the application.

Please add the following new heading *before* the paragraph starting “Photocatalysis is an effect...” on page 1 of the application:

(2) Background Art

Please delete the heading starting “Disadvantages of the prior art...” on page 3 of the application.

Please add the following new paragraphs *after* the paragraph starting “This object is achieved by the features...” on page 3 of the application:

BRIEF SUMMARY OF THE INVENTION

In a first aspect, the present invention provides a process for carrying out photocatalytic reactions. The process comprises the steps of: providing solid photocatalysts; suspending the photocatalysts in a liquid or gaseous reaction medium or applying them to a surface; providing microradiators in particle form which are suitable for adsorbing a supplied electromagnetic radiation and, with a time delay, for emitting light which excites the photocatalysts; charging up the microradiators at an electromagnetic radiation source; transporting the microradiators to the photocatalysts for exciting the photocatalysts; and activating the photocatalysts by means of the energy emitted by the microradiators.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a laboratory suspension reactor.

Figure 2 is a laboratory suspension reactor with external circulation of the microradiator (MR).

Figure 3 is a tube reactor with meander ribs and separate external circulation of photocatalyst (PC) and microradiators (MR).

Figure 4 is a tube reactor with photocatalyst-coated honeycomb internals and external activation according.

DETAILED DESCRIPTION OF THE INVENTION

Please delete the heading starting "Transport of energy..." on page 3 of the application.

Please delete the heading "The microradiator MR" on page 6 of the application.

Please delete the heading "Examples of suitable phosphorescent solids" on page 6 of the application.

Please delete the heading starting "Prevention of abrasion on the MR..." on page 8 of the application.

Please delete the heading "Separation of photocatalyst PC and microradiators MR" on page 8 of the application.

Please delete the heading "Suitability of the solutions for media and reactions" on page 10 of the application.

Please add the following new abstract on a separate sheet following the claim pages.

ABSTRACT OF THE DISCLOSURE

The invention relates to a reactor for carrying out photocatalysed reactions in liquid or gaseous reaction media, consisting of a reactor vessel with a solid photocatalyst (PC), feed lines and take-off lines, mixing means, and a means of supplying electromagnetic radiation, containing microradiators which absorb the electromagnetic radiation and, with a time delay, emit light which excites the photocatalyst, and also to a process for carrying out photocatalytic reactions, in which solid PC are suspended in the liquid or gaseous reaction medium and are

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activated by means of microradiators which are charged up at an electromagnetic radiation source and which emit this energy with a time delay.